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Serial No. 09/803,829
Case Docket No. CHR 01-34

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

#6

Applicants: G. Frederick Hutter and Camille K. Stebbins

Serial No.: 09/803,829

Group Art Unit: 1774

Filed: March 12, 2001

For: Cationic Colloidal Dispersion Polymers for Ink Jet Coatings

Examiner: Tamra Dicus

Honorable Commissioner of
Patents and Trademarks
Washington, DC 20231

DECLARATION UNDER 37 C.F.R. §1.132

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I, Thomas M. Sisson, declare as follows:

1. THAT I received my Ph. D. in Chemistry from the University of Arizona in 1997. Since 1997 I have performed research in industrial polymer chemistry, specifically emulsion polymerization at MeadWestvaco as well as SC Johnson Polymer in Racine Wisconsin. From 1997 to 2000, I was employed as a Research Scientist at SC Johnson Polymer, Racine Wisconsin. From 2000 to present, I have been employed with MeadWestvaco Corporation, Charleston, South Carolina, and currently hold the position of Technical Manager. I have more than 20 publications and patents in the field of polymer chemistry.
2. THAT I am familiar with the art and science of polymer chemistry and ink jet coatings.
3. THAT it is well known to those skilled in the art that microemulsions and emulsions have different physical and chemical characteristics.

4. THAT I am familiar with the above-described patent application and the teachings contained therein.

A skilled artisan would understand that the Applicants' teach a conventional emulsion polymerization reaction that has discrete particles larger in size than those employed in microemulsions. This polymerization reaction produces an emulsion polymerization product (i.e., a latex) containing discrete polymer particles. The pH of the emulsion polymerization product is subsequently adjusted to swell the particles so that they are no longer discrete, but are dispersed in water. This one-phase homogeneous cationic acrylic colloidal dispersion polymer composition can then be employed as a one-phase binder for ink jet receptive coatings.

5. THAT I am familiar with U.S. Patent No. 5,521,229 to Lu et al. and the teachings contained therein.

Lu et al. teaches a photoinitiated polymerization product of a microemulsion having an aqueous phase and an oil phase where the photoinitiated polymerization product has a bicontinuous structure that is substantially nonporous.

One skilled in the art would recognize that the interconnected continuous domains of the hydrophobic and hydrophilic phases of this microemulsion would, upon polymerization, result in the formation of a polymer having both hydrophobic and hydrophilic properties.

6. THAT one skilled in the art would understand that the emulsion polymerization reaction taught by the Applicants is a significantly different chemical reaction from the microemulsion polymerization reaction taught by Lu et al. A skilled artisan would further recognize that the cationic acrylic colloidal dispersion polymer compositions that result from the Applicants' emulsion polymerization reaction substantially differ from the bicontinuous structured polymer composites which are formed from Lu et al.'s microemulsion polymerization reaction.

7. THAT one skilled in the art would recognize that the Applicants' teach a one-phase homogeneous cationic acrylic colloidal dispersion polymer composition, and that this polymer composition differs significantly from the two-phase bicontinuous polymer composite taught by

Lu et al. The Applicants' polymer composition is hydrophilic in nature and is suitable for use with water-based ink jet coatings. In contrast, Lu et al. teaches a substantially nonporous polymer composite which contains hydrophobic phase. These properties would teach one skilled in the art away from the attempted use of Lu et al.'s polymer composites as additives for water-based ink jet coatings.

8. THAT I am familiar with U.S. Patent No. 5,372,884 to Abe et al. and the teachings contained therein.

Abe et al. teaches the use of colloidal silica that has been coated with a cation-modifier, preferably at least one hydrous metal oxide selected from the group consisting of hydrous aluminum oxide, hydrous zirconium oxide, and hydrous tin oxide. A skilled artisan would understand that Abe et al.'s compounds are pigment-like in nature. These compounds are significantly different from the cationic organic polymer compositions taught and claimed by the Applicants, which can be employed as coating binders.

9. THAT the teachings contained in Lu et al. combined with the teachings contained in Abe et al. would not teach or suggest to one skilled in the art the Applicants' cationic acrylic colloidal dispersion polymer compositions.

10. THAT the undersigned declares further that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.



Thomas M. Sisson

Date: 10/15/02